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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
RINEHART, KENNETH	

ART UNIT	PAPER NUMBER
3749	

DATE MAILED: 06/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/676,367	YOKOYAMA ET AL.	
	Examiner	Art Unit	
	Kenneth B. Rinehart	3749	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 May 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *34 and 35* is/are allowed.

6)☒ Claim(s) *1-29,31-33 and 36-45* is/are rejected.

7)☒ Claim(s) *30* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 September 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Response to Arguments

Applicant's arguments filed 5/2/05 have been fully considered but they are not persuasive. Regarding claims 7-10, 37, 44, and 45 the applicant apparaently is arguing that none of the references teach heating of a produced vapor under vacuum. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., heating of a produced vapor under vacuum) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. Regarding claims 13-19, 21, 23-29, 31 the applicant appears to argue that the Mak purge gas will contribute to the generation of organic halides when cooling the heated residue. The examiner disagrees. Any fair reading of the cited passage will reveal that the reference reads on the claim limitation as the purge gas comprises an inert gas with no oxygen remaining in the gases, and the purge gas can be nitrogen. Regarding claims 13 and 20 the reference reads on the claim limitations. Applicant's arguments with respect to claims 1-6, 11-12, 22, 23, 25-29, 36, 37, 38, 39, 40, 41, 42, and 43 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 13 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Fochtman. Fochtman shows means for heating the soil (5, fig. 6), a hermetic zone (13, fig. 6), means for

introducing a heated residue of the soil from the means for heating the soil to the hermetic zone (screw flights of 5, fig. 6), means for purging the hermetic zone by a purge gas which is substantially organic halide free (9, fig. 6), means for cooling the heated residue (8, fig. 6), halogen trapping means having a metal for forming chemical compounds with halogen contained in gases produced by heating of the soil or an absorbent for absorbing the halogen in the produced gases (col. 9, lines 9-17).

Claim 32, 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Meador. Meador shows wherein an object to be treated is passed through a furnace allowing the control of thermal decomposition temperature or through a plurality of reduced pressure furnaces different in thermal decomposition temperature when being subjected to thermal decomposition treatment under a vacuum state formed using at least a vacuum pump, a furnace allowing the control of thermal decomposition temperature at which an object to be treated is subjected to thermal decomposition treatment is provided, the pressure in the furnace is changed from normal pressure to a vacuum state formed using at least a vacuum pump (15, 70, fig. 1), wherein a gaseous substance produced by the thermal decomposition treatment is heated under a vacuum state (gases will inherently be heated in chamber 12, fig. 1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-6, 11-12, 22, 23, 25-29, 36, 37, 38, 39, 40, 41, 42, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mak et al in view of Melber et al (5595483). Mak et al discloses introducing the first soil to a hermetic zone (col. 2, line 29, 22, fig. 1), pumping out the hermetic zone to a vacuum state (col. 5, lines 51-68, col. 6, lines 1-3), thermally decomposing at least a part of the organic halides by heating the first soil under in the hermetic zone under the vacuum state (col. 5, lines 11-15, col. 5, lines 51-68, col. 6, lines 1-3), heating under a vacuum state a gaseous substance produced by the thermal decomposition of the organic halides, wherein a gaseous substance produced by the thermal decomposition is heated under a vacuum state (col. 4, lines 58-60).the organic halides are dioxins (col. 2, line 43), reducing the concentration of halogen contained in gases produced by the thermal decomposition of the soil (col. 3, lines 7-11), wherein a thermally decomposed residue of the first soil is cooled after the hermetic zone is purged by a purge gas which is substantially organic halide free and not capable of generating organic halides (col. 7, line 59, col. 9, lines 61-64, fig. 3), the purge gas contains at least one element selected from a group consisting of helium, neon, argon, krypton, xenon, nitrogen, and hydrogen (col. 7, line 59), wherein the thermally decomposing step is performed in the hermetic zone where an oxygen concentration is controlled (12, fig.1, col. 5, lines 51-68, col. 6, lines 1-3), the soil containing organic halides is thermally decomposed under a vacuum state (col. 5, lines 11-15, col. 5, lines 51-68, col. 6, lines 1-3), the concentration of halogen contained in gases produced by the thermal decomposition of soil is reduced (col. 3, lines 7-11), wherein an object to be treated containing organic halides is thermally decomposed under a vacuum state (col. 5, lines 11-15, col. 5, lines 51-68, col. 6, lines 1-3), means for heating the object (76, 78, 80, fig. 1), a hermetic zone (12, fig. 1), means for introducing a heated residue to the hermetic zone (22, fig.

1), means for purging the hermetic zone by a purge gas which is substantially organic halide free (126, fig. 1), means for cooling the heated residue (fig. 3), the heating means is a thermal decomposition furnace for thermally decomposing the object (12, fig. 1), wherein the heating means is a reduced pressure thermal decomposition furnace for thermally decomposing the object to be treated under reduced pressure (12, fig. 1), the purging means introduces the purge gas after the pressure in the hermetic zone is reduced (col. 5, lines 11-15, lines 26-29, 168, fig. 1), wherein a heated residue containing residual dioxins generated from waste disposal facilities and factories is treated while being heated under a vacuum state (col. 5, lines 11-15, col. 5, lines 51-68, col. 6, lines 1-3, 38, 16, fig. 1), a heating device configured to heat the soil (54, 56, fig. 1), a hermetic zone (16, fig. 1), an introducing device configured to introduce a heated residue of the soil from the heating device to the hermetic zone (22, fig. 1), a purging device configured to purge the hermetic zone by a purge gas which is substantially organic halide free (col. 5, lines 11-15, lines 26-29, 168, fig. 1), a first cooling device configured to cool the heated residue (fig. 3), wherein the heating device is a combustion furnace for performing combustion treatment for the soil (54, 56, fig. 1) wherein the heating device is a thermal decomposition furnace configured to perform thermal decomposition treatment for the soil (fig. 1, col. 5, lines 11-15), wherein the heating device is a reduced pressure thermal decomposition treatment for the soil (col. 5, lines 11-15, col. 5, lines 51-68, col. 6, lines 1-3,). Mak et al discloses applicant's invention substantially as claimed with the exception of using at least a vacuum pump, formed using at least a vacuum pump, formed using at least a vacuum pump, a vacuum pump configured to pump out the hermetic zone to a vacuum state. Melber et al teaches using at least a vacuum pump (10c, fig. 1), formed using at least a vacuum pump (10 c, fig. 1), a vacuum pump configured to pump

out the hermetic zone to a vacuum state (10c, fig. 1) for the purpose of providing a motive force to remove gases. It would have been obvious to one of ordinary skill in the art to modify Mak et al by including using at least a vacuum pump, formed using at least a vacuum pump, formed using at least a vacuum pump, a vacuum pump configured to pump out the hermetic zone to a vacuum state as taught by Melber et al for the purpose of providing a motive force to remove gases so that thermal treatment process will occur.

Claims 7-10, 37, 44, and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fochtman et al in view of Melber et al. Fochtman et al heating the first soil so that at least part of the organic halide are evaporated or decomposed (col.6, lines 63-69, col. 7, lines 1-3, col. 7, line 26) introducing a heated residue of the soil to a hermetic zone (13, fig. 6), cooling the heated residue of the first soil (8, fig. 6) after the hermetic zone is purged by a purge gas which is substantially organic halide free and not capable of generating organic halides (8, fig. 6), the organic halides are dioxins (col. 7, line 59), shows means for heating the soil (5, fig. 6), a hermetic zone (13, fig. 6), means for introducing a heated residue of the soil from the means for heating the soil to the hermetic zone (screw flights of 5, fig. 6), means for purging the hermetic zone by a purge gas which is substantially organic halide free (9, fig. 6), means for cooling the heated residue (8, fig. 6), the purge gas contains at least one element selected from a group consisting of helium, neon, argon, krypton, xenon, nitrogen, and hydrogen (col. 16, line 9), reducing a concentration of halogen contained in gases produced by heating the first soil (col. 9, lines 54-58), halogen trapping means having a metal for forming chemical compounds with halogen contained in gases produced by heating of the soil or an absorbent for absorbing the halogen in the produced gases (col. 9, lines 9-17), a heating device configured to heat the soil

(col.6, lines 63-69, col. 7, lines 1-3, col. 7, line 26), a hermetic zone (13, fig. 6), an introducing device configured to introduce a heated residue of the soil from the heating device to the hermetic zone (col. 15, lines 49-51), a purging device configured to purge the hermetic zone by a purge gas which is substantially organic halide free (nitrogen, 9, fig. 3), a first cooling device configured to cool the heated residue (8, fig. 6, nitrogen, fig. 6), a trapping device configured to trap halogens having a metal for forming chemical compounds with halogen contained in gases produced by the heating of the soil or an absorbent configured to absorb the halogen in the produced gases (col. 9, lines 9-17). Fochtman et al discloses applicant's invention substantially as claimed with the exception of under a vacuum state formed using at least a vacuum pump, a vacuum pump configured to pump out the hermetic zone to a vacuum state. Melber et al teaches under a vacuum state formed using at least a vacuum pump, a vacuum pump configured to pump out the hermetic zone to a vacuum state (10c, fig. 1) for the purpose of providing a motive force to remove gases. It would have been obvious to one of ordinary skill in the art to modify Fochtman et al by including under a vacuum state formed using at least a vacuum pump, a vacuum pump configured to pump out the hermetic zone to a vacuum state as taught by Melber et al for the purpose of providing a motive force to remove gases so that thermal treatment process will occur.

Claims 13-19, 21, 23-29, 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Veltmann in view of Mak et al. Veltmann discloses means for heating the soil or object (20, fig. 2), a hermetic zone (2, fig. 2), means for introducing a heated residue of the soil from the means for heating the soil to the hermetic zone (57, fig. 15), means for cooling the heated residue (4, fig. 2), the heating means is a combustion furnace for performing combustion treatment for

the soil (20, fig. 2), the heating means is a combustion furnace for combusting the object (20, fig. 2), reforming means for reforming gases produced by the heating of the soil at a first temperature at which dioxins are decomposed (col. 11, lines 34-47), cooling means for cooling the produced gases to a second temperature so that an increase in the concentration of the dioxins in the gases is suppressed (col. 11, lines 47-55). Veltmann discloses applicant's invention substantially as claimed with the exception of means for purging the hermetic zone by a purge gas which is substantially organic halide free, the heating means is a thermal decomposition furnace for thermally decomposing the object, wherein the heating means is a reduced pressure thermal decomposition furnace for thermally decomposing the object to be treated under reduced pressure, the purging means introduces the purge gas after the pressure in the hermetic zone is reduced, the organic halides are dioxins, the purge gas contains at least one element selected from a group consisting of helium, neon, argon, krypton, xenon, nitrogen, and hydrogen. Mak teaches means for purging the hermetic zone by a purge gas which is substantially organic halide free (col. 6, lines 4-11), the heating means is a thermal decomposition furnace for thermally decomposing the object (12, fig. 1), wherein the heating means is a reduced pressure thermal decomposition furnace for thermally decomposing the object to be treated under reduced pressure (12, fig. 1), the purging means introduces the purge gas after the pressure in the hermetic zone is reduced (col. 5, lines 11-15, lines 26-29, 168, fig. 1), the organic halides are dioxins (col. 7, line 59), the purge gas contains at least one element selected from a group consisting of helium, neon, argon, krypton, xenon, nitrogen, and hydrogen (col. 6, line 9, col. 7, line 59). It would have been obvious to one of ordinary skill in the art to modify Veltmann by including means for purging the hermetic zone by a purge gas which is substantially organic

halide free, the heating means is a thermal decomposition furnace for thermally decomposing the object, wherein the heating means is a reduced pressure thermal decomposition furnace for thermally decomposing the object to be treated under reduced pressure, the purging means introduces the purge gas after the pressure in the hermetic zone is reduced, the organic halides are dioxins, the purge gas contains at least one element selected from a group consisting of helium, neon, argon, krypton, xenon, nitrogen, and hydrogen as taught by Mak et al for the purpose of reducing the quantity of off gases to reduce the cost of the process.

Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fochtman in view of Rickard and Melber. Fochtman discloses a heating device configured to heat the soil (col.6, lines 63-69, col. 7, lines 1-3, col. 7, line 26), a hermetic zone (13, fig. 6), an introducing device configured to introduce a heated residue of the soil from the heating device to the hermetic zone (col. 15, lines 49-51), a purging device configured to purge the hermetic zone by a purge gas which is substantially organic halide free (nitrogen, 9, fig. 3), a first cooling device configured to cool the heated residue (8, fig. 6, nitrogen, fig. 6). Fochtman discloses applicant's invention substantially as claimed with the exception of a reforming device configured to reform gases produced by the heating of the soil at a first temperature at which dioxins are decomposed, a second cooling device configured to cool the produced gases to a second temperature so that an increase in the concentration of dioxin in the gases are suppressed. Rickard teaches a reforming device configured to reform gases produced by the heating of the soil at a first temperature at which dioxins are decomposed (col. 18, lines 1-3), a second cooling device configured to cool the produced gases to a second temperature so that an increase in the concentration of dioxin in the gases are suppressed (40, fig. 1) for the purpose of eliminating additional aftertreatment and

combustion steps. It would have been obvious to one of ordinary skill in the art to modify Fochtman by including a reforming device configured to reform gases produced by the heating of the soil at a first temperature at which dioxins are decomposed, a second cooling device configured to cool the produced gases to a second temperature so that an increase in the concentration of dioxin in the gases are suppressed as taught by Rickard for the purpose of eliminating additional aftertreatment and combustion steps so that the cost of the apparatus can be reduced. Fochtman et al in view of Rickard discloses applicant's invention substantially as claimed with the exception of a vacuum pump configured to pump out the hermetic zone to a vacuum state. Melber et al teaches a vacuum pump configured to pump out the hermetic zone to a vacuum state (10c, fig. 1) for the purpose of providing a motive force to remove gases. It would have been obvious to one of ordinary skill in the art to modify Fochtman et al by including a vacuum pump configured to pump out the hermetic zone to a vacuum state as taught by Melber et al for the purpose of providing a motive force to remove gases so that thermal treatment process will occur

Allowable Subject Matter

Claims 34 and 35 are allowed.

Claim 30 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth B. Rinehart whose telephone number is 571-272-4881. The examiner can normally be reached on 7:20 -4:20.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ira Lazarus can be reached on 571-272-4881. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

kbr

KENNETH RINEHART
PRIMARY EXAMINER